

Addendum
to the
Wildlife Specialists Report
for the
Mount Ashland Late-Successional Reserve Habitat Restoration and Fuels
Reduction Project

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Introduction

The purpose of this addendum to the Wildlife Specialists Report is to determine the effects of changes to the action alternatives (Section 1) and the addition of the preferred alternative (Section 2) on wildlife species, federally designated northern spotted owl critical habitat, and Northwest Forest Plan late-successional reserves. Species background information and existing environment are covered in the original Wildlife Specialists Report and will not be included in this addendum except where there is new and relevant information specific to these topics that changes previous analysis. This addendum will address any additional adverse effects to wildlife resulting from changes to the action alternatives as well as any adverse effects analyzed in the original wildlife specialists report that have been reduced by these changes. Changes between the DEIS and the FEIS that have the potential to impact wildlife and their habitats or new information not considered in the original report include the following:

Defensible Fuel Profile Zones (DFPZ): Within DFPZs, snags > 20 inches dbh or groups of snags will not be felled unless hazardous to operations.

Mastication: Mastication will only occur on ≤ 35 percent slopes.

Silviculture Prescriptions: In true fir stands, red fir will be the highest priority species for retention.

Landing T9: This landing was moved to the north side of the 40S15 road.

Construction of temporary spur roads in riparian reserves: Field review indicated that the unnamed tributary of Long John Creek flows under the 40S15 road approximately 200 feet north of the proposed temporary spur road T401. Therefore, this temporary road will not cross this tributary. Field review also indicated that the riparian reserve buffer around the intermittent creek in unit 471 (Sections 2 and 3; Township 41S; Range 1W) should not extend north of the 40S14 14.2 road. Therefore, proposed temporary spur 317B will not enter a riparian reserve.

Timber Harvest Plans (THP): A new THP (North Klamath) has been proposed in Sections 5, 7, and 19 of Township 47N; Range 08W; and Sections 23 and 25 of Township 48N; Range 09W; M. D. B. & M; in Siskiyou County.

Northern spotted owl (NSO) activity centers: Based on cumulative survey results through 2007, an additional NSO activity center has been documented in the Cow Creek drainage.

Updated NSO habitat layer: Based on additional field review, the Project NSO habitat layer was updated.

Updated fisher habitat layer: Based on additional field review, the Project fisher habitat layer was updated.

Section 1. Changes in Original Report

This section includes amendments and clarifications that need to be incorporated into or added to the original Wildlife Specialists Report. The following amendments and clarifications are organized using the same outline as the original report (numbering, headings, sub-headings, etc) to clearly identify the sections of that report that are being addressed. All other sections in the original report remain unchanged and information presented remains valid.

1.1 Wildlife and Habitat

Significant issues of spur road construction effects on habitat

Clarification: Less than 0.5 mile of temporary spur road construction would occur in late-successional stands. This would result in the degrading of approximately 1 acre of late-successional habitat.

1.1.1 Late-successional Reserves

1.1.1.2 Effects of Alternatives 2, 4, and 5 – Action Alternatives

Temporary Road and Landing Construction

Amendment: Construction of temporary roads and landings has the potential to remove large-diameter trees, snags, and DWD, and fragment existing late-successional stands. To the extent possible, temporary spurs have been routed to minimize impacts to large-diameter trees and late-successional stands. Approximately 0.15 to 0.25 mile of temporary spur road is proposed through existing late-successional stands. Thus, approximately one acre of late-successional forest, or < 0.1 percent of extant late-successional forest in the Project area will be degraded. Late-successional stands proposed to be entered include an open-canopy ridge-top stand, and two closed-canopy mixed conifer stands. These stands range in size from approximately 0.25 to 35 acres with the intervening forest consisting of predominately early- and mid-successional stands with scattered patches of late-successional stands. A sample inventory of stands within the Project area indicated that DWD > 24 inches is very limited (T. Laurent, pers. comm. 2006). Therefore, because large DWD is an important structural component of LSRs, all trees >24 inches that need to be felled for a temporary road will be left on site. By removing mid-successional habitat the construction of temporary spurs also has the potential to increase fragmentation of future late-successional stands preventing that piece of ground from developing into late-successional habitat in at least the near term. Due to their distribution and the linear nature of roads, the effects of these actions are generally dispersed across the Project Area; however, more concentrated effects may occur in the upper portion of the Siskiyou Gap DFPZ under Alternatives 2 and 4. However, at the scale of the LSR this level of potential fragmentation is expected to be insignificant relative to the ability of the LSR to provide its intra- and inter-provincial connectivity roles and to provide a functional, interactive, late-successional and old-growth forest ecosystem.

By routing temporary roads through non-late-successional stands wherever possible, routing temporary roads to minimize the felling of large-diameter trees, and because temporary roads are designed to facilitate activities that promote the development of and protection of existing late-successional stands, the proposed temporary road construction is consistent with NWFP S&Gs for LSRs (USDA Forest Service and USDI Bureau of Land Management 1994a, p. C-16).

Under Alternatives 2 and 4, one landing is proposed in late-successional habitat resulting in the removal of approximately 0.5 acre of late-successional habitat.

1.1.1.3 Cumulative Effects

Cumulatively, the Project will have effects to the Mt. Ashland LSR as it will remove 0.5 acre and degrade up to 5 acres of late-successional forest. These acres represent approximately 0.4 percent of the extant late-successional forest in the LSR. Thus, at the scale of the LSR these activities are not expected to significantly impact the ability of the LSR to provide a functional, interactive, late-successional and old-growth forest ecosystem.

1.1.2 Northern Spotted Owl Critical Habitat

1.1.2.2 Effects of Alternatives 2, 4 and 5 – Action Alternatives

Temporary Road and Landing Construction

Amendment: No temporary road or landing construction is proposed in nesting or roosting habitat. Construction of temporary roads and landings is expected to remove small patches (0.5 acre or less) of foraging habitat totaling between 3 and 5 acres and 25 to 35 acres of dispersal habitat in 0.5 to two acre patches. These acres represent approximately 0.1 to 0.2 and 0.4 to 0.6 percent of extant foraging and dispersal habitat in the Project area, respectively. Because large DWD is an important structural component of NSO critical habitat and is generally lacking in the Project area, all trees >24 inches that need to be felled for a temporary road or landing will be left on site. Because patches of foraging habitat to be removed are small, impacts to foraging habitat are dispersed across the Project area, and the total acres of foraging habitat to be removed is minimal, these actions are not expected to impact the ability of CA-14 and OR-76 to provide foraging opportunities for NSOs. More concentrated effects to dispersal habitat may occur in the upper portion of the Siskiyou Gap DFPZ, particularly under Alternatives 2 and 4. However, due to the existing amount of dispersal habitat within the Project area, total acres of dispersal habitat to be removed, and the linear nature of the effects resulting from temporary spur construction, the dispersal function of CA-14 and OR-76 is not expected to be affected.

1.1.2.3 Cumulative Effects

Cumulatively, the Project will impact CA-14 and OR-76 by removing or downgrading between 7 and 9 acres of foraging habitat and 25 to 35 acres of dispersal habitat. These acres represent <0.1 and 0.5 percent of extant foraging and dispersal habitat in these CHUs, respectively. Due to the

limited impacts to the primary constituent elements, the action alternatives will not significantly increase the cumulative effects to these CHUs.

1.1.3 Northern Spotted Owl

Amendment: The estimated home ranges of 13 historic activity centers overlap the Project area and have actions proposed within their boundaries. The amount and quality of habitat within the core areas and home ranges is highly variable (Table 1). Existing habitat within nine of these estimated home ranges is below the level (1,336 acres) at which NSO abundance is expected to decrease and productivity is anticipated to be impaired. Additionally, eight of the core areas lack large amounts or contiguous blocks of nesting and roosting habitat.

Table 1. Acres of suitable habitat pre- and post treatment within core areas and home ranges of NSOs located within 1.3 miles of the Mt. Ashland Habitat Restoration and Fuels Reduction Project stands.

Activity Center #	Name	Pre-treatment Core (0–0.7mi)			Pre-treatment Home Range (0–1.3 mi)			Habitat Removed/dow ngraded Core (0–0.7mi)		Habitat Removed/ downgraded Home Range (0–1.3mi)	
		NR	F	Total	NR	F	Total	NR	F	NR	F
KL1167 (SK102)	Deer Cr.	34	405	439	390	1222	1612	0	0	0	0.5
KL1169 (SK291)	N. Hungry Cr.	115	659	774	276	1831	2107	0	0	0	1
KL1176 (SK041)	S. Cottonwood Cr.	69	610	679	319	1499	1818	0	0	0	0
KL1178 (SK220)	Grouse Cr.	16	295	311	45	722	767	0	0.5	0	0.7
KL1180 (SK101)	Cow Cr./Long John Cr.	23	211	234	154	671	825	0	0.5	0	2.5
KL1185 (SK307)	Upper Grouse Cr.	79	209	288	85	489	574	0	0	0	0
KL1188 (SK308)	W. Branch Long John	15	135	150	26	384	410	0	0	0	4
KL1189	Long John	2	130	132	17	547	564	0	0	0	6
KL 1190	Lower Cow Cr.	121	240	361	303	715	1018	0	0	0	.75
KL1267 (SK449)	Fly Stain Cr.	256	460	716	400	1634	2034	0	0.5	0	0.5
KL1297 (SK320)	N. Cottonwood Cr.	138	161	299	390	776	1166	0	0	0	0
KL1310 (SK501)	Lower Grouse Cr.	7	193	200	116	1149	1265	0	0.2	0	1.2

KL1311 (SK529)	W. Fork Big Red Mtn.	151	85	236	595	390	985	0	0	0	2
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1.1.3.2 Effects of Alternatives 2, 4 and 5 – Action Alternatives

Temporary Road and Landing Construction

Amendment: No construction of temporary roads or landings is proposed in nesting or roosting habitat. Temporary road and landing construction is expected to remove between three and five acres of foraging habitat. Foraging habitat proposed to be removed occurs in small patches (0.5 acre or less) and is dispersed across the Project area. Because large DWD is an important component of NSO foraging habitat, all trees >24 inches that need to be felled for a temporary road will be left on site.

Construction of temporary roads and landings will also remove between 25 and 35 acres of dispersal habitat. These acres represent approximately 0.4 to 0.6 percent of extant dispersal habitat in the Project area. Patches of dispersal habitat to be removed range from 0.5–2 acres.

Effects to Individual NSOs and Historic Activity Centers

Amendment: Foraging habitat will be removed or downgraded from seven NSO home ranges that currently contain limited amounts of habitat (KL1178, KL1180, KL1188, KL1189, KL1190, KL1310, KL1311) (Table 1). However, only 0.2 to 0.5 acre of foraging habitat would be removed from any one NSO core area and between 0.5 and six acres would be removed or downgraded from any one NSO home range. These acres represent <0.1 to approximately 1.1 percent of the extant suitable habitat within these NSO core areas and home ranges, respectively. Additionally, the majority of impacts to foraging habitat would occur outside of the core area and breeding season home range of any NSO activity center. Also, it is unlikely that the four acres of foraging habitat to be downgraded in stand 339, which occurs in the home ranges of KL1188 and KL1189, provide quality foraging habitat due to the physiographic features associated with these acres. Therefore, because patches of foraging habitat to be removed are small, foraging habitat to be downgraded likely has low intrinsic value, impacts to foraging habitat are dispersed across the Project area, and most of the foraging habitat to be removed occurs in the outer portion of any given home range, the removal and downgrading of foraging habitat is not expected to impact foraging opportunities for NSOs in the Project area.

1.1.3.3 Cumulative Effects

Amendment: This cumulative effects analysis considers the effects to NSOs within the Project area as well as the effects within the estimated 1.3 mile home range of NSOs that overlap with Project treatments. Reasonably foreseeable future actions within the Project Area include small scale timber harvest on private lands. Outside of the Project area but within the estimated 1.3 mile home range of NSOs that overlap with Project treatments (herein referred to as the NSO analysis area) there are three timber harvest plans (THP) expected to be implemented in the reasonably foreseeable future (Bumblebee, Hungry Youth, and North Klamath). The Bumblebee

THP is expected to remove approximately 25–30 acres of foraging habitat from two NSO home ranges (4 acres from KL1167 and 25 acres from KL1267). Approximately 400 acres of the Hungry Youth THP overlaps with the NSO analysis area. These acres contain roughly equal amounts of foraging and dispersal habitat. Although silvicultural prescriptions for the Hungry Youth THP have not yet been finalized, it is expected that approximately 25 percent of the THP will be in clearcut patches (Doug Staley pers. comm. 2006). Thus it is reasonable to conclude that the Hungry Youth THP would remove up to 50 acres of foraging habitat from the home range of KL1169 and up to 5 acres from the home range of KL1176. A similar amount of dispersal habitat would also be expected to be removed from these home ranges with the implementation of the hungry Youth THP. The North Klamath THP will remove approximately 10 acres of foraging habitat from the home ranges of KL 1167 and KL 1190. Other planned projects or activities expected to occur on federal land within the Project area include ongoing pre-commercial thinning in existing plantations, grazing, and dispersed recreation. These activities are not expected to impact NSOs habitat. See Table 2 for a list of reasonably foreseeable future actions used for this cumulative effects analysis.

Table 2. Foreseeable future actions considered for NSO cumulative effects analyses

THP Name and/or Landowner	Year	Type of Action	Acres ¹	Location
Caswell	Unknown	Timber Harvest	unknown	T41S; R1E; Section 18
Caswell	Unknown	Timber Harvest	unknown	T41S; R1E; Section 8
Caswell	Unknown	Timber Harvest	unknown	T41S; R1W; Section 13
Bumblebee	2007	Timber Harvest	Approx. 100	T48N; R8W; Section 33
North Klamath	2008	Timber Harvest	326	T47N; R8W Sections 5, 7, and 19; T48N; R9W Sections 23 and 25
Hungry Youth	2009	Timber Harvest	Approx 1,000	T48N; R8W; Sections 13, 24, 25, and 30
USFS	On-going	Grazing	Project area	Area wide
USFS	On-going	Recreation	Project area	Area wide
USFS	On-going	Plantation thinning	unknown	Unknown

¹ Data in this column represent total acres of the action not acres of NSO habitat impacted by these projects.

Cumulatively, all of the above proposed projects may impact NSOs by removing or downgrading between 94 and 99 acres of foraging habitat and 75 to 85 acres of dispersal habitat from 11 home ranges (Table 4). However, the majority of foraging habitat to be removed occurs outside of NSO core areas and in home ranges that have adequate amounts of suitable habitat. Foraging habitat removed from home ranges with limited amounts of habitat represents between 0.02 and 1.1 percent of extant foraging habitat in these home ranges. Within the Project area, foraging habitat to be removed occurs in small patches or has low intrinsic value. Additionally, the cumulative acres of habitat removed or downgraded represent 1.3 percent and 0.75 percent of extant foraging and dispersal habitat in the NSO analysis area, respectively. Due to the limited

impacts to habitat, the cumulative effects to habitat are not expected to significantly impact foraging opportunities for NSOs or create barriers to dispersal.

Table 3. Cumulative acres of suitable habitat removed/downgraded within core areas and home ranges of NSOs located within 1.3 miles of the Mt. Ashland Habitat Restoration and Fuels Reduction Project stands.

Activity Center #	Name	Pre-treatment Core (0–0.7mi)			Pre-treatment Home Range (0–1.3 mi)			Cumulative Habitat Removed/downgraded Core (0–0.7mi)		Cumulative Habitat Removed/downgraded Home Range (0–1.3mi)	
		NR	F	Total	NR	F	Total	NR	F	NR	F
KL1167 (SK102)	Deer Cr.	34	405	439	400	1197	1597	0	0	0	14.5
KL1169 (SK291)	N. Hungry Cr.	115	658	773	272	1834	2106	0	0	0	56
KL1176 (SK041)	S. Cottonwood Cr.	69	610	679	319	1499	1818	0	0	0	5
KL1178 (SK220)	Grouse Cr.	16	291	307	45	712	757	0	0.5	0	0.7
KL1180 (SK101)	Cow Cr./Long John Cr.	23	210	233	154	638	792	0	0.5	0	2.5
KL1185 (SK307)	Upper Grouse Cr.	79	209	288	85	489	574	0	0	0	0
KL1188 (SK308)	W. Branch Long John	15	122	137	26	370	396	0	0	0	4
KL1189	Long John	2	127	129	14	522	536	0	0	0	6
KL 1190	Lower Cow Cr.	121	240	361	303	715	1018	0	0	0	10
KL1267 (SK449)	Fly Stain Cr.	256	456	712	395	1622	2017	0	0.5	0	25.5
KL1297 (SK320)	N. Cottonwood Cr.	138	161	299	390	776	1166	0	0	0	0
KL1310 (SK501)	Lower Grouse Cr.	2	191	193	111	1129	1240	0	0.2	0	1.2
KL1311 (SK529)	W. Fork Big Red Mtn.	151	83	234	595	373	968	0	0	0	2

1.1.10 Pacific Fisher

Amendment: Pacific Fisher (*Martes pennanti*) is a Forest Service Region 5 Sensitive Species due to the loss and fragmentation of habitat across California, as well as the fact that they are easily trapped. FEMATs analysis of the NWFP gave the fisher a 63 percent chance of remaining well

distributed throughout the northwest and a 37 percent chance that it would become locally restricted. The USFWS was petitioned to list the fisher by several environmental organizations in November 2000. After a 12-month review, the USFWS found the Pacific fisher to be a distinct population segment (DPS) and gave a “warranted but precluded” decision to the petition. As a result of that decision, the West Coast DPS has become a Federal Candidate species under the ESA (USDI Fish and Wildlife Service 2004). In their 12-month finding, the USFWS recognized that timber harvest and fuels reduction treatments can destroy, alter, or fragment fisher habitat and that habitat loss and fragmentation appear to be significant threats to the fisher (USDI Fish and Wildlife Service 2004).

Fisher home range size is variable and likely reflects habitat quality (Zielinski et al. 2004a). Using studies from across the United States, Powell and Zielinski (1994) calculated a mean home range size of approximately 25 square miles (16,000 acres) for males and 10 square miles (6,400 acres) for females. Male fisher home ranges may overlap one or more female home ranges (Powell 1993).

Fisher tend to be most active during crepuscular hours (sunrise and sunset) but may be active any time of the day (Arthur & Krohn 1991; Powell 1993). However, recent research by Weir & Corbould (2007) suggest that fisher were more likely to be inactive than active during daylight hours. Periods of activity are generally 2 to 5 hours in length, separated by long stretches of inactivity (> 10 hours) (Powell 1993).

Habitat for fisher is typically characterized as mature, structurally complex, conifer and mixed conifer-hardwood forest (Buskirk & Powell 1994; Zielinski et al. 2006). Habitat necessary for denning, foraging, and daily resting bouts constitute the specific habitat requirements for this species (Zielinski et al. 2006). Numerous studies have shown that fisher avoid areas with little (<40 percent) or no forest cover (Rosenberg & Raphael 1986; Jones & Garton 1994; Dark 1997). However, it is assumed that fishers will use patches of habitat that are connected by forested stands, but will not likely use patches of habitat that are separated by large openings or areas lacking adequate canopy cover (Buskirk & Powell 1994). Fisher also frequently use riparian areas as travel corridors (Jones & Garton 1994; Slader et al. 1994).

In the western United States fisher den sites are usually located in forested stands with complex structural characteristics typical of late-successional forests (Powell & Zielinski 1994; Aubry & Raley 2006). These characteristics include large trees and snags, multi layered vegetation, large woody debris, and high canopy closure. Cavities in large trees or snags are most commonly used for denning, but hollow logs may also be used (Lewis & Stinson 1998; Powell & Zielinski 1994; Aubry & Raley 2006).

Fishers appear to be more selective of habitat for resting than foraging (Powell & Zielinski 1994). Fishers typically choose structurally diverse, closed canopy forests with the largest woody structure (both live trees and snags) available for their daily resting bouts (Powell & Zielinski 1994; Zielinski et al. 2004b; Zielinski et al. 2006) but may rest in younger or managed stands if large remnant structures exist (Jones 1991; Yaeger 2005). Rest sites include a variety

of structures including mistletoe brooms, squirrel and raptor nests, and brush piles but most commonly occur in cavities of large live and dead trees or large diameter logs (Powell & Zielinski 1994; Weir & Harestad 2003; Zielinski et al. 2004b). In more xeric areas, rest sites are often located near drainage bottoms close to water (Zielinski et al. 2004b; Yaeger 2005). Rest sites are seldom reused, suggesting that fishers require multiple rest sites distributed throughout their home range (Zielinski et al. 2006).

Based on the above description of fisher habitat, there is approximately 1300 acres of fisher denning and resting habitat within the Project area. This habitat occurs in the higher elevation true fir and mixed conifer stands and scattered pockets of mid-elevation mixed conifer. Within the high elevation true fir and mixed conifer there are approximately 500 acres of denning and resting habitat. The only contiguous block (greater than 50 acres) of denning and resting habitat occurs in the extreme northeast corner of the Project area in the true fir zone. Denning and resting habitat in the mid-elevation mixed conifer zone is distributed in small patches (typically 25 acres or less) and totals approximately 800 acres. The intervening landscape is dominated by mid-successional stands with moderate to high canopy closure, providing a high degree of connectivity between patches of denning and resting habitat. Potential foraging habitat, in the form of forested stands with moderate to high canopy closure, is widely distributed across the Project area and occurs in larger blocks.

1.1.10.2 Effects of Alternatives 2, 4 and 5 – Action Alternatives

Thinning and Fuels Reduction

Thinning designed to promote the development of late-successional habitat will not remove important structural components of fisher denning or resting habitat such as large-diameter trees, snags, and DWD. Trees infected with mistletoe may be removed but silvicultural prescriptions have been designed to ensure that this habitat component will remain well distributed across the landscape. Silvicultural prescriptions have also been designed to retain 60 percent canopy cover in suitable NSO habitat. Because denning and resting habitat for fisher is a smaller subset of suitable NSO habitat, these prescriptions will not significantly reduce canopy cover in these fisher habitats. Prescriptions for underburning have been designed to imitate low-intensity fire, thus, underburning is not expected to significantly impact the amount and distribution of large snags and DWD. Other fuel reduction treatments such as hand piling and burning of fuels and mastication will retain MLSRA recommendations for snags and DWD. Because the structural elements of fisher habitat will be retained, thinning designed to promote the development of late-successional habitat and fuels reduction treatments are not expected to remove denning and resting habitat.

It is expected that fishers will avoid areas with little or no forest cover but will likely use patches of habitat if they are connected by forested stands. Because the only proposed silvicultural prescription is thinning, stands will be thinned to a variable density including 15 percent of each stand to remain unthinned, an average of 60 percent canopy closure will be retained in true fir stands and the lower half of north and east facing slopes, an average of 40 to 60 percent canopy closure will be retained on south and west facing slopes, and 60 percent canopy cover will be

retained in suitable NSO habitat, thinning prescriptions designed to promote the development of late-successional habitat will not create large openings or significantly reduce forest cover and will retain a high level of habitat connectivity. Additionally, actions within one site potential tree of riparian reserves are limited to pre-commercial thinning which is not expected to affect the connectivity function of these areas.

Under Alternatives 2 and 4, thinning to create the Siskiyou Gap DFPZ would remove approximately 4 acres of denning and resting habitat in stand 339 by reducing canopy cover to 40 percent. While thinning in DFPZs may remove discrete structural components of fisher habitat outside of stand 339, silvicultural prescriptions have been designed to retain suitable NSO habitat where it occurs within DFPZs, ensuring that these activities will not remove any additional denning and resting habitat.

Temporary Road and Landing Construction

Between 0.2 to 0.3 miles of temporary road construction is proposed in fisher denning and resting habitat. Because construction of temporary roads would remove large diameter trees and create approximately a thirty foot gap in the canopy, it is expected that this activity would remove between 0.7 and 1.1 acres of denning and resting habitat and 8 to 24 acres of foraging habitat. While the construction of temporary roads will create linear openings in forested stands, research suggests that narrow roads with low traffic volume, such as logging roads, do not influence home range establishment, daily movement patterns, or use of otherwise suitable habitat (Dark 1997; Aubry and Raley 2006). Therefore, the construction and subsequent decommissioning of temporary roads is not expected to create barriers to fisher movements or measurably affect habitat connectivity. One landing is proposed to be constructed in fisher denning and resting habitat, resulting in the removal of 0.5 acre of fisher habitat.

Road-Related Activities

Road-related activities, including maintenance, closures, and decommissioning is not expected to remove any important structural components of fisher habitat. The implementation of the proposed treatments will result in an increase of vehicular traffic within the Project area, increasing the possibility that a fisher will be killed or injured in a vehicular collision. However, due to the inherent low density of fisher, the low rate of speed traveled by vehicles within the Project area, and because the majority of activities will occur during times of the day when fisher are less active, it is highly unlikely that fisher(s) will be killed or injured in a vehicular collision.

Summary

Combined, thinning to create the Siskiyou Gap DFPZ and construction of temporary roads and landings would be expected to remove between 0.7 and 5.5 acres or 0.05 to 0.43 percent of the extant denning and resting habitat in the Project area. Proposed actions are not expected to affect habitat connectivity. Because fishers have large home ranges, this level of habitat removal would be negligible and not expected to affect the viability of fishers in the Project area.

1.1.10.3 Cumulative Effects

Because the fisher is a wide ranging species with a large home range size, the cumulative effects analysis area for this species includes the Project area plus a 1.5 to 2 mile buffer around the Project (equivalent to the Project's NSO analysis area) as well as the north zone of the Mount Ashland LSR (portion of the LSR north of the Siskiyou Crest). This analysis area was selected because it allows for a more complete analysis of effects to potential fisher home ranges that may overlap with and be impacted by Project activities and because this area could hypothetically support a small localized population of 7 or more individuals.

The Project area is predominately federal lands with small in-holdings of private ownership. Much of the project area is bounded by industrial timber lands. Prior to European settlement the majority of the Beaver Creek watershed, which includes the Project area, was late-successional mixed conifer forest. During the railroad logging era (1910 – 1932) the Project area was privately owned and was extensively harvested – an estimated 90 percent of the trees within the Project area were removed. During this era pine was the preferred species with the largest trees on the landscape being targeted for removal. Thus, at the conclusion of the railroad logging era fisher habitat in the Project area was limited to higher elevation true fir stands and scattered pockets of mixed conifer at lower elevations. After acquiring much of the railroad logged area in land exchanges, the KNF conducted partial cuts during the 1950s – 1970s, further contributing to changes in distribution and abundance of fisher habitat. Similar to railroad logging, KNF partial cuts primarily targeted large trees but did not focus on pine. Although the extent of impacts to fisher habitat on the small in-holdings of privately owned lands within the Project area is unknown, it is expected that important components of fisher habitat have been removed.

The majority of land within the buffer around the Project area (approximately 28,000 acres) is owned by industrial timber companies or managed by the KNF. Federally owned lands in this zone have also been impacted by railroad logging and/or KNF partial cuts. Industrial timber company lands in this zone have been and continue to be actively managed. While it is difficult to quantify the actual impacts to fisher habitat, it is reasonable to conclude that past and current timber management on these lands has reduced the abundance and distribution of fisher habitat. Currently there is approximately 1,950 acres of fisher denning and resting habitat in the buffer area surrounding the Project area.

Primarily because a large portion is allocated as the Ashland watershed, timber harvest in the north zone of the LSR has been relatively limited (USDA Forest Service 1996). Within the Ashland watershed, timber harvest has been limited to small clear cuts adjacent to the 2060 road, thinning to create shaded fuelbreaks, individual and small group selection to reduce fire hazard, and roadside salvage. To the east and west of the Ashland watershed, harvest has been more extensive and impacts to fisher habitat have likely been greater. According to the MLSRA, there were approximately 8,370 acres of late-successional habitat in the north zone in 1996 (USDA Forest Service 1996). Because the above description of fisher denning and resting habitat closely resembles late-successional habitat as defined in the MLSRA (structurally complex stands with canopy closure usually greater than 60 percent, and average stem diameter greater

than 24 inches below 5000 feet with smaller average tree diameter [≤ 24 inches] and less understory above 5000 feet), and there has not been any measurable loss of late-successional habitat since 1996, the MLSRA account of late-successional habitat represents a reasonable approximation of the extent and distribution fisher habitat in the north zone of the LSR. Therefore, it is estimated that there is approximately 11,600 acres of fisher denning and resting habitat in the fisher analysis area (3,250 acres in the NSO analysis area and 8,370 acres in the north zone of the LSR).

Reasonably foreseeable future actions within the Project area include small scale timber harvest on private lands. Based on aerial photo interpretation, fisher denning and resting habitat do not appear to occur in these areas. In the buffer zone surrounding the Project area, three timber harvest plans (THP), Bumblebee, Hungry Youth, and North Klamath are proposed. Harvest units within these THPs generally lack the mature, structurally complex stands typical of fisher denning sites, however, some structure that is suitable for resting bouts will likely be removed. Because significant portions of these plans are to be clearcut or harvested using a shelterwood prescription, it is expected that approximately 110 acres of fisher foraging habitat will be removed. Despite these impacts, foraging habitat will remain well distributed in this zone. Other federal projects or activities planned in the Project area and the buffer surrounding the Project include ongoing pre-commercial thinning in existing plantations, grazing, and dispersed recreation. These activities are not expected to impact fisher habitat.

In the north zone of the Mount Ashland LSR, reasonably foreseeable future actions include the Ashland Watershed Protection Project, the Mt. Ashland Ski Area Expansion, and the Ashland Forest Resiliency Project. The Ashland Watershed Protection Project and the Mt. Ashland Ski Area Expansion could remove up to 24 acres and 37 acres of late-successional habitat, respectively. While these projects will likely remove habitat suitable for fisher denning, resting, and foraging they are not expected to create barriers to fisher movement. The Ashland Forest Resiliency Project is designed to restore more fire resilient forests in the Ashland watershed by implementing several types of hazardous fuel treatments. Primarily through a reduction in canopy closure, approximately 1,000 acres of fisher denning, resting, and/or foraging habitat will be removed or degraded with the implementation of this project. Because fisher home range size is likely indicative of habitat quality, activities that remove or degrade habitat could impact fisher by increasing the size of or causing a shift in existing home ranges.

Cumulatively, reasonably foreseeable future actions will impact fisher by reducing the quality and/or quantity of available denning, resting, and foraging habitat and by fragmenting existing habitat. However, these effects are not expected to significantly impact the viability of the local fisher population in the analysis area because less than 9 percent of existing denning and resting habitat will be impacted, and denning and resting habitat will remain well distributed across the northern portion of the LSR. Additionally, foraging habitat will remain abundant and well distributed throughout the analysis area and no barriers to fisher movement are expected as a result of these actions. Because Project activities are expected to have negligible impacts to fisher habitat and not affect habitat connectivity, these actions are not expected to measurably impact the viability of fisher in the Project area. Therefore, Project activities would not

measurably contribute to loss of fisher population viability at larger scales regardless of other reasonably foreseeable future actions.

1.1.17 Blue-gray Taildropper

1.1.17.2 Effects of Alternatives 2, 4 and 5 – Action Alternatives

Temporary Road and Landing Construction

Amendment: Under alternatives 2 and 4, one landing is proposed in potential blue-gray taildropper habitat. If surveys indicate that this habitat is occupied, this landing will be relocated.

1.1.18 Tehama Chaparral

1.1.18.2 Effects of Alternatives 2, 4 and 5 – Action Alternatives

Temporary Road and Landing Construction

Clarification: Temporary road construction is not proposed in potential Tehama chaparral habitat.

1.1.19 Siskiyou Mountains Salamander

1.1.19.2 Effects of Alternatives 2, 4 and 5 – Action Alternatives

Temporary Road and Landing Construction

Clarification: Temporary road construction is not proposed in potential Siskiyou Mountains salamander habitat.

Northwest Forest Plan Survey and Manage Species

1.1.20.1 Siskiyou Sideband

1.1.20.3 Effects of Alternatives 2, 4 and 5 – Action Alternatives

Temporary Road and Landing Construction

Amendment: Under alternatives 2 and 4, one landing is proposed in potential Siskiyou sideband habitat. If surveys indicate that this habitat is occupied, this landing will be relocated.

Klamath National Forest Management Indicator Species

1.1.21.1 *River/Stream Species Association*

Effects of Alternatives 2, 4 and 5 – Action Alternatives

Thinning and Fuels Reduction

Clarification: KNF Forest Plan S&G and Project design features for thinning and fuels reduction in riparian reserves are designed to ensure that riparian reserves are intact and functioning post treatment and that existing stream shading is not reduced. Additionally, only trees <9 inches DBH will be felled within 170' of a stream.

Temporary Road and Landing Construction

Clarification and amendment: Under proposed alternatives 2 and 4, one temporary road is proposed in a riparian reserve. This temporary road does not cross in-stream habitat but parallels approximately 300 feet of an unnamed tributary of Long John Creek. Riparian habitat in this area consists primarily of small diameter conifer. The construction of this temporary road would remove approximately 0.25 acre of riparian habitat. The remaining temporary roads and landing construction will occur outside of riparian reserves, and thus, will have negligible impacts to stream water quality.

1.1.21.3 *Snag Species Associations*

Effects of Alternatives 2, 4 and 5 – Action Alternatives

Thinning and Fuels Reduction

Amendment: Thinning to create DFPZs may impact snag associated species habitat by removing large-diameter trees (>20 inches), snags, and DWD. The removal of large-diameter trees would only occur under limited circumstances (see chapter 2) and large snags (>20 inches) or groups of snags will not be felled unless hazardous to operations. Additionally, where consistent with DFPZ objectives, large-diameter DWD will be retained. Therefore, impacts to the distribution and abundance of potential these habitat components are expected to be minimal.

Section 2. The Preferred Alternative

This alternative is a modification of Alternative 5. Changes were made to respond to public comments received following issuance of the DEIS. For a complete description of the preferred alternative and comparison with the other action alternatives see chapter 2 of the FEIS. Species accounts and their existing environment have been addressed in the original Wildlife Specialists Report and the addendum to this report.

Wildlife and Habitat

Significant Issue of spur road construction effects on habitat

The preferred alternative proposes the construction of 1.7 miles of temporary road. The majority of construction would occur in the Long John and Beaver Grouse 7th field watersheds. Miles of road per square mile of land within these watersheds would increase from 4.92 to 5.06 and from 4.50 to 4.52, respectively. Approximately 0.12 mile of temporary spur road is proposed through existing late-successional stands. Thus, approximately 0.5 acres of late-successional forest, or < 0.1 percent of extant late-successional forest in the Project area will be degraded. The remaining temporary spur roads would be constructed in plantations and early- and mid-successional stands. Fragmentation of habitat and increased edge habitat from temporary spur road construction are similar to those discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Late-successional Reserves

Thinning and Fuels Reduction

Thinning designed to promote the development of late-successional habitat and fuels reduction treatments will have similar effects to late-successional habitat as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Thinning to create DFPZs may remove large diameter trees, snags, and DWD. However, the removal of large-diameter trees would only occur under very limited circumstances (see FEIS chapter 3.3 Fire and Fuels). Additionally, the incorporation of MLSRA recommendations for snags and DWD and by limiting the felling of snags > 20 inches or groups of snags to situations where they pose a hazard to operations, will ensure that these habitat components are retained. Thus, thinning to create DFPZs is not expected to significantly impact late-successional habitat.

Temporary Road and Landing Construction

Construction of temporary roads and landings has the potential to remove large-diameter trees, snags, and DWD, and fragment existing late-successional stands. To the extent possible, temporary spurs have been routed to minimize impacts to large-diameter trees and late-successional stands. Approximately 0.12 mile of temporary spur road is proposed through existing late-successional stands. Thus, approximately 0.5 acres of late-successional forest, or < 0.1 percent of extant late-successional forest in the Project area will be degraded. Late-successional stands proposed to be entered are closed-canopy mixed conifer stands ranging in size from approximately 0.25 to 35 acres. A sample inventory of stands within the Project area indicated that DWD > 24 inches is very limited (T. Laurent, pers. comm. 2006). Therefore, because large DWD is an important structural component of LSRs, all trees >24 inches that need to be felled for a temporary road will be left on site. Construction of temporary roads will have similar effects to LSR function as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

One landing is proposed in late-successional habitat, resulting in the removal of 0.5 acre of late-successional habitat.

Road-Related Activities

Road related activities will have similar effects to late-successional habitat as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Cumulative Effects

Actions contributing to cumulative effects for the Mt Ashland LSR were disclosed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Cumulatively, the Project will have effects to the Mt. Ashland LSR as it will remove 0.5 acre and degrade 0.5 acre of late-successional forest. These acres represent < 0.01 percent of the extant late-successional forest in the LSR. Thus, at the scale of the LSR these effects are negligible and are not expected to impact the ability of the LSR to provide a functional, interactive, late-successional and old-growth forest ecosystem regardless of other reasonably foreseeable future actions.

Northern Spotted Owl Critical Habitat

Thinning and Fuels Reduction

Thinning designed to promote the development of late-successional habitat and the primary constituent elements of NSO critical habitat, and fuels reduction treatments, will have similar effects to existing NSO habitat as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Thinning to create DFPZs may remove discrete components of NSO critical habitat such as large diameter trees and snags. However, the removal of large-diameter trees would only occur under very limited circumstances (see FEIS chapter 3.3 Fire and Fuels). Additionally, the incorporation of MLSRA recommendations for snags and DWD and by limiting the felling of snags > 20 inches or groups of snags to situations where they pose a hazard to operations, ensure that these habitat components will be retained. Silvicultural prescriptions have also been designed to ensure that the DFPZs will not result in large canopy gaps and to meet the canopy retention requirements for NSO habitat when it occurs within a DFPZ. Although some structural components of critical habitat may be reduced with the above actions, when assessed at the stand scale, effects are not expected to remove habitat or change its function (i.e., stands providing foraging habitat will remain foraging quality post treatment).

Temporary Road and Landing Construction

No temporary road or landing construction is proposed in nesting or roosting habitat. Construction of temporary roads and landings is expected to remove 3.3 acres of foraging habitat in 0.5 acre or less patches and 16 acres of dispersal habitat in 0.5 to two acre patches. These acres represent approximately 0.12 and 0.27 percent of extant foraging and dispersal habitat in the Project area, respectively. Because large DWD is an important structural component of NSO critical habitat and is generally lacking in the Project area, all trees >24 inches that need to be felled for a temporary road will be left on site. Because patches of foraging and dispersal habitat to be removed are small, impacts to these habitats are dispersed across the Project area, and the

total acres of habitat to be removed is minimal, these actions are not expected to impact the ability of CA-14 and OR-76 to provide foraging opportunities for NSOs or create barriers to dispersal.

Road-Related Activities

Road related activities will have similar effects to NSO critical habitat as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Cumulative Effects

Actions contributing to cumulative effects for NSO critical habitat were disclosed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Cumulatively, the Project will impact CA-14 and OR-76 by removing 3.3 acres of foraging habitat and 16 acres of dispersal habitat. These acres represent <0.1 percent and 0.11 of extant foraging and dispersal habitat in these CHUs, respectively. Due to the limited impacts to the primary constituent elements, the action alternatives will not significantly increase the cumulative effects to these CHUs

Northern Spotted Owl

Thinning and Fuels Reduction

Thinning designed to promote the development of late-successional habitat and fuels reduction treatments will have similar effects to NSO habitat and NSO prey as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Thinning to create DFPZs has the potential to impact NSO habitat by removing large-diameter trees (>20 inches), snags, and DWD. However, the removal of large-diameter trees would only occur under very limited circumstances when it is necessary to meet stand density objectives or if a tree shows obvious signs of disease or poor vigor. Additionally, prescriptions for thinning in DFPZs have been designed to meet the canopy retention requirements for NSO habitat when it occurs within a DFPZ and to avoid the creation of large canopy gaps. Therefore, the number of large trees to be removed is expected to be minimal and would not change the function of any stands (i.e., stands that provide foraging habitat would continue to provide foraging habitat post harvest). Also, the incorporation of MLSRA recommendations for snags and DWD and by limiting the felling of snags > 20 inches or groups of snags to situations where they pose a hazard to operations, will ensure that these habitat components are retained.

Temporary Road and Landing Construction

No temporary road or landing construction is proposed in nesting or roosting habitat. Construction of temporary roads and landings is expected to remove 3.3 acres of foraging habitat in ≤0.5 acre patches and 16 acres of dispersal habitat in 0.5 to two acre patches. These acres represent approximately 0.12 and 0.27 percent of extant foraging and dispersal habitat in the Project area, respectively. Because large DWD is an important structural component of NSO

critical habitat and is generally lacking in the Project area, all trees >24 inches that need to be felled for a temporary road will be left on site.

Road-Related Activities

Road related activities will have similar effects to NSO critical habitat as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Effects to Individual NSOs and Historic Activity Centers

Seasonal restrictions for proposed activities have been discussed in the original Wildlife Specialists Report. No nesting/roosting habitat will be removed. Construction of temporary roads and landings will remove foraging habitat from seven NSO home ranges that currently contain limited amounts of habitat (KL1178, KL1180, KL1188, KL1189, KL 1190, KL1310, and KL 1311) (Table 4). However, only 0.5 acre of foraging habitat would be removed from any one NSO core area and between 0.5 and 2.25 acres would be removed or downgraded from any one NSO home range. These acres represent <0.1 to approximately 0.35 percent of the extant suitable habitat within these NSO core areas and home ranges, respectively. Therefore, because patches of foraging habitat to be removed are small, impacts to foraging habitat are dispersed across the Project area, and most of the foraging habitat to be removed occurs in the outer portion of any given home range, the removal and downgrading of foraging habitat is not expected to impact foraging opportunities for NSOs in the Project area. Construction of temporary roads and landings will also remove 16 acres of dispersal habitat. Due to the amount of existing dispersal habitat within the Project area the removal of 16 acres of dispersal habitat is not expected to create any dispersal barriers to NSOs.

Table 4. Acres of suitable habitat pre- and post-treatment within core areas and home ranges of NSOs located within 1.3 miles of the Mt. Ashland Habitat Restoration and Fuels Reduction Project stands.

Activity Center #	Name	Pre-treatment Core (0–0.7mi)			Pre-treatment Home Range (0–1.3 mi)			Habitat Removed/dow ngraded Core (0–0.7mi)		Habitat Removed/ downgraded Home Range (0–1.3mi)	
		NR	F	Total	NR	F	Total	NR	F	NR	F
KL1167 (SK102)	Deer Cr.	34	405	439	390	1222	1612	0	0	0	0.5
KL1169 (SK291)	N. Hungry Cr.	115	659	774	276	1831	2107	0	0	0	1
KL1176 (SK041)	S. Cottonwood Cr.	69	610	679	319	1499	1818	0	0	0	0
KL1178 (SK220)	Grouse Cr.	16	295	311	45	722	767	0	0.5	0	0.5
KL1180 (SK101)	Cow Cr./Long	23	211	234	154	671	825	0	0.5	0	2.25

	John Cr.										
KL1185 (SK307)	Upper Grouse Cr.	79	209	288	85	489	574	0	0	0	0
KL1188 (SK308)	W. Branch Long John	15	135	150	26	384	410	0	0	0	0.5
KL1189	Long John	2	130	132	17	547	564	0	0.5	0	2
KL 1190	Lower Cow Cr.	121	240	361	303	715	1018	0	0	0	.75
KL1267 (SK449)	Fly Stain Cr.	256	460	716	400	1634	2034	0	0.5	0	0.5
KL1297 (SK320)	N. Cottonwood Cr.	138	161	299	390	776	1166	0	0	0	0
KL1310 (SK501)	Lower Grouse Cr.	7	193	200	116	1149	1265	0	0	0	1.5
KL1311 (SK529)	W. Fork Big Red Mtn.	151	85	236	595	390	985	0	0	0	1.25

Cumulative Effects

Actions contributing to the cumulative effects for NSOs were disclosed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report and in Section 1 of the Addendum to that report. The preferred alternative will have similar effects as discussed for alternatives 2, 4, and 5 in Section 1 of the Addendum to the original Wildlife Specialists Report but will remove five to six fewer acres of foraging habitat and nine to 19 fewer acres of dispersal habitat.

Northern Goshawk

Because the preferred alternative will not remove any habitat from the primary nest zone or the foraging habitat zone of the historic Flystain Creek site, and because habitat retention S&Gs and seasonal restrictions for habitat modification and noise generating activities will be applied to any new site discovered during the life of the Project, this alternative will have no effect on northern goshawks.

Great Gray Owls

Thinning and Fuels Reduction

Thinning and fuels reduction treatments are proposed in approximately 25 to 35 acres of potential GGO nesting and foraging habitat. These treatments will have similar effects to GGO as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. To avoid the possibility of injuring or killing nestlings or recently fledged owlets or disturbing adults during the breeding season, a seasonal restriction of March 1st to July 31st will apply to all thinning and

fuels reduction activities that are proposed within 0.25 mile of GGO habitat (stands 476, 477, and 700-702).

Because suitable habitat for GGOs will not be removed, seasonal restrictions to protect nestlings and owlets and breeding activities of adults will be implemented, incorporation of MLSRA recommendations for large snags will ensure that nesting structure is retained, and the limited number of acres of suitable habitat to be entered, thinning and fuels reduction treatments will have no adverse effect to GGOs.

Temporary Road and Landing Construction

No temporary road or landing construction is proposed in GGO habitat.

Road-Related Activities

Road-related activities will not impact GGO habitat.

Cumulative Effects

The Project will have no effect on GGOs; therefore there will be no cumulative effects from the proposed alternatives combined with other actions in the analysis area.

Willow Flycatcher

Thinning and Fuels Reduction

Thinning designed to promote the development of late-successional habitat will have similar effects to willow flycatchers as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Although prescribed fire will not be ignited within riparian reserves, underburns will be allowed to back into them. Thus, an unknown but potentially appreciable amount of willow flycatcher habitat may be underburned. Potential impacts include the removal of habitat or if underburning occurs in the spring, disturbing normal breeding activities. Because underburns are designed to imitate low intensity fire and shrubs such as willow and alder often become established following a disturbance (Petrides 1992), any impacts to willow flycatcher habitat are expected to be short term. Additionally, it is expected that a significant portion of the underburns will occur in fall, outside of the willow flycatcher breeding season.

Temporary Road and Landing Construction

No temporary road or landing construction is proposed in suitable willow flycatcher habitat.

Road-Related Activities

Road decommissioning may impact small, discrete patches of habitat but is not expected to result in a significant reduction of habitat.

Cumulative Effects

Actions contributing to the cumulative effects for willow flycatchers were discussed in the original Wildlife Specialists Report. The preferred alternative has the potential to underburn considerably more acres of willow flycatcher habitat than was addressed in that report. Cumulatively, the impacts of underburning and grazing are not expected to have a significant on willow flycatcher habitat because grazing allotments limit the number of livestock in the area and impacts from underburning are expected to be minimal or of short duration.

Wolverine

Thinning and Fuels Reduction

Thinning in DFPZs and fuels reduction treatments may remove individual snags or large DWD that may be used for cover or denning. However, by incorporating MLSRA recommendations for these habitat components and by limiting the felling of snags > 20 inches or groups of snags to situations where they pose a hazard to operations, impacts to wolverine habitat are expected to be negligible. Thinning and fuels reduction activities will employ heavy machinery and may require repeated visits to a site. Because wolverines are sensitive to human disturbance, these activities will likely prevent wolverines from using the Project area during implementation. Thus, normal movement patterns or foraging activities may be disrupted.

Temporary Road and Landing Construction

Temporary road and landing construction may remove individual snags or large DWD that may be used for cover or denning. At the scale of a wolverine's home range, these impacts to habitat are expected to be negligible. However, temporary road and landing construction will employ heavy machinery that will create noise above ambient levels and increase the likelihood that wolverines will avoid the area.

Road-Related Activities

Road-related activities are not expected to remove suitable habitat but will employ heavy machinery and increase the likelihood that wolverines will avoid the area.

Cumulative Effects

Actions contributing to the cumulative effects for wolverines were disclosed in the original Wildlife Specialists Report. The preferred alternative will treat approximately 1,000 more acres than was addressed in that report. By introducing a large amount of human disturbance on the landscape, cumulative actions may preclude the use of portions of the Project area by wolverines. However, because less than 50 percent of the area within the Project area boundary will be

treated, only portions of the treatments will be implemented in any given year, and the size of the Project area represents a small segment of a wolverine's home range, cumulative actions are not expected to preclude the use of a significant portion of a wolverine's home range.

Pacific Fisher

Thinning and Fuels Reduction

Thinning designed to promote the development of late-successional habitat and fuels reduction treatments will have similar effects to pacific fisher habitat and their prey as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report and in Section 1 of the addendum to that report. Thinning to create DFPZs may impact fisher habitat by removing large-diameter trees (>20 inches), snags, and DWD. However, the removal of large-diameter trees would only occur under limited circumstances (see FEIS chapter 3.3 Fire and Fuels), the removal of large snags or groups of snags will be limited to situations where they pose a hazard to operations, and where consistent with DFPZ objectives large-diameter DWD will be retained. Thinning prescriptions are also designed to minimize habitat fragmentation and to ensure that the DFPZs will not result in large canopy gaps. Therefore, impacts to the distribution and abundance of potential denning and rest sites and habitat connectivity are expected to be minimal.

Temporary Road and Landing Construction

Approximately 0.2 mile of temporary road construction is proposed in fisher denning and resting habitat. Because construction of temporary roads would remove large diameter trees and create approximately a thirty foot gap in the canopy, it is expected that this activity would remove approximately 0.7 acres of denning and resting habitat and 5.5 acres of foraging habitat. While the construction of temporary roads will create linear openings in forested stands, research suggests that narrow roads with low traffic volume, such as logging roads, do not influence home range establishment, daily movement patterns, or use of otherwise suitable habitat (Dark 1997; Aubry and Raley 2006). Therefore, the construction and subsequent decommissioning of temporary roads is not expected to create barriers to fisher movements or measurably affect habitat connectivity. One landing is proposed to be constructed in fisher denning and resting habitat, resulting in the removal of 0.5 acre of fisher habitat.

Road-Related Activities

Road related activities will have similar effects to Pacific fisher as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report and in Section 1 of the addendum to that report.

Cumulative Effects

Actions contributing to cumulative effects for fisher were disclosed in the original Wildlife Specialists Report and in Section 1 of the addendum to that report. The preferred alternative is

expected to have negligible impacts to fisher habitat and is not expected to measurably impact the viability of fisher in the Project area. Therefore, effects to fisher and their habitat within the Project area would not measurably contribute to loss of fisher population viability at larger scales regardless of other reasonably foreseeable future actions.

American Marten

Thinning and Fuels Reduction

Thinning and fuels reduction treatments are not proposed in American marten denning and resting habitat.

Temporary Road and Landing Construction

No temporary road or landing construction is proposed in marten habitat.

Road-Related Activities

Road-related activities are not expected to impact marten habitat.

Cumulative Effects

The Project will have no effect on American marten; therefore there will be no cumulative effects from the preferred alternative combined with other actions in the analysis area.

Pallid and Townsend's Big-eared Bat

Thinning and Fuels Reduction

Thinning designed to promote the development of late-successional habitat will not remove individual large trees or snags that may be used for roosting. Thinning to create DFPZs and fuels reduction treatment will have similar effects to these species as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Temporary Road and Landing Construction

Temporary road and landing construction may remove individual large trees that may be used as roost sites. Additionally, these activities may occur adjacent to possible roost sites, increasing the potential to disrupt roosting behavior.

Road-Related Activities

Road-related activities are not expected to remove suitable habitat but may occur adjacent to potential roost sites.

Cumulative Effects

Actions contributing to cumulative effects for these species were disclosed in the original Wildlife Specialists Report. The preferred alternative will treat approximately 1,000 more acres than was addressed in that report, increasing the potential to disturb occupied roost sites.

Northwestern Pond Turtle

Thinning and Fuels Reduction

Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Temporary Road and Landing Construction

No temporary roads or landings are proposed adjacent to the holding pond.

Road-Related Activities

No road-related activities are proposed adjacent to the holding pond.

Cumulative Effects

Actions contributing to cumulative effects for northwestern pond turtles were discussed in the original Wildlife Specialists Report. Cumulatively, these effects combined with the preferred alternative would not significantly impact northwestern pond turtle populations.

Cascade Frog

Thinning and Fuels Reduction

Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Temporary Road and Landing Construction

No temporary roads or landings are proposed adjacent to the holding pond.

Road-Related Activities

No road-related activities are proposed adjacent to the holding pond.

Cumulative Effects

The preferred alternative will have no effect on Cascades frogs; therefore, there will be no cumulative effects from the proposed alternatives combined with other actions in the Project area.

Blue-gray Taildropper

Thinning and Fuels Reduction

Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Temporary Road and Landing Construction

Approximately 300 feet of temporary road construction is proposed in potential blue-gray tailed dropper habitat. Temporary road construction will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. One landing is proposed in potential blue-gray tailed dropper habitat. If surveys indicate that this habitat is occupied, this landing will be relocated.

Road-Related Activities

Road-related activities are not expected to impact blue-gray tailed dropper habitat.

Cumulative Effects

Actions contributing to the cumulative effects for blue-gray tailed droppers were disclosed in the original Wildlife Specialists Report. Cumulatively, these effects combined with the preferred alternative would not significantly impact blue-gray tailed dropper habitat.

Tehama Chaparral

Thinning and Fuels Reduction

Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Temporary Road and Landing Construction

Construction of temporary roads and landings is not proposed within or adjacent to Tehama chaparral habitat.

Road-Related Activities

Road-related activities are not expected to impact Tehama chaparral habitat.

Cumulative Effects

Actions contributing to cumulative effects for the Tehama chaparral snail were discussed in the original Wildlife Specialists Report. Cumulatively, these effects combined with the preferred alternative would not significantly impact Tehama chaparral habitat.

Siskiyou Mountains Salamander

Thinning and Fuels Reduction

Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Temporary Road and Landing Construction

Construction of temporary roads and landings is not proposed within or adjacent to Siskiyou Mountains salamander habitat.

Road-Related Activities

Road-related activities are not expected to impact Siskiyou Mountains salamander habitat.

Cumulative Effects

The preferred alternative will have no effect on Siskiyou Mountains salamanders; therefore, there will be no cumulative effects from the proposed alternatives combined with other actions in the Project area.

Bald Eagle, Peregrine Falcon, and Foothill Yellow-legged Frog

Habitat for the bald eagle, peregrine falcon and foothill yellow-legged frog do not occur in the Project area. Therefore, the preferred alternative will have no effect on these species.

Northwest Forest Plan Survey and Manage Species

Siskiyou Sideband

Thinning and Fuels Reduction

Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Temporary Road and Landing Construction

Approximately 300 feet of temporary road construction is proposed in potential Siskiyou sideband habitat. Temporary road construction will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. One landing is proposed in potential Siskiyou sideband habitat. If surveys indicate that this habitat is occupied, this landing will be relocated.

Road-Related Activities

Road-related activities are not expected to impact Siskiyou sideband habitat.

Cumulative Effects

Actions contributing to cumulative effects for the Siskiyou sideband were discussed in the original Wildlife Specialists Report. Cumulatively, these effects combined with the preferred alternative would not significantly impact Siskiyou sideband habitat.

Siskiyou Mountains salamander, Blue-gray Tailedropper, Tehama Chaparral, and Great Gray Owl

See sensitive species accounts above.

Oregon Red Tree Vole

Outside of known range.

Klamath National Forest Management Indicator Species

River/Stream Species Association

Tailed Frog, American Dipper, Northern Water Shrew, and Long-tailed Vole

Thinning and Fuels Reduction

Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Temporary Road and Landing Construction

Construction of temporary roads and landings is not proposed within riparian reserves. Therefore, these activities will not remove riparian habitat and will have negligible impacts to stream water quality.

Road-Related Activities

Road related activities will have similar effects to the river/stream species association as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Cumulative Effects

Actions contributing to cumulative effects for these species were discussed in the original Wildlife Specialists Report. Cumulatively, effects for the preferred alternative are similar to those as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Thus, cumulative effects for the preferred alternative would not significantly impact habitat for the river/stream species association.

Cascade Frog

See sensitive species accounts above.

Marsh/Lake/Pond Species Association

Northern red-legged Frog

Thinning and Fuels Reduction

Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Temporary Road and Landing Construction

No temporary roads or landings are proposed within or adjacent to northern red-legged frog habitat.

Road-Related Activities

No road-related activities are proposed within or adjacent to northern red-legged frog habitat.

Cumulative Effects

Actions contributing to cumulative effects for the northern red-legged frog were discussed in the original Wildlife Specialists Report. Cumulatively, effects for the preferred alternative are similar to those as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Thus, cumulative effects for the preferred alternative would not significantly impact northern red-legged frogs or their habitat.

Northwestern Pond Turtle

See sensitive species accounts above.

Snag Species Association

Pileated Woodpecker, Hairy Woodpecker, Red-breasted sapsucker, Vaux's Swift, Black-backed Woodpecker, and White-headed Woodpecker

Thinning and Fuels Reduction

Thinning to promote the development of late-successional habitat and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Thinning to create DFPZs may impact snag associated species habitat by removing large-diameter trees (>20 inches), snags, and DWD. However, the removal of large-diameter trees would only occur under limited circumstances (see FEIS chapter 3.3 Fire and Fuels), the removal of large snags or groups of snags will be limited to situations where they pose a hazard to operations, and where consistent with DFPZ objectives large-diameter DWD will be retained. Additionally, stands to be treated are predominately mid-successional stands that are not providing high quality mature forest habitat and treated stands represent only 32

percent of the entire Project area. Therefore, snag recruitment is expected to continue over the majority of the Project area. Thus, the above actions are not expected to have a significant impact to the abundance and distribution of important habitat components of snag associated species.

Temporary Road and Landing Construction

Temporary road or landing construction will remove some large trees and snags suitable for nesting and roosting. However, roads have been aligned and landing sites identified to minimize impacts to these habitat components. Thus, at the scale of the Project, these impacts are expected to be minimal.

Road-Related Activities

Road-related activities, including maintenance, closures, and decommissioning is not expected to remove any important structural components of snag associated species habitat.

Cumulative Effects

Actions contributing to cumulative effects for the snag species association were discussed in the original Wildlife Specialists Report. Cumulatively, effects for the preferred alternative are similar to those as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Thus, cumulative effects for the preferred alternative would not significantly impact habitat for these species.

Grassland/Shrub-Steppe Species Association

There is no habitat for pronghorn (*Antilocarpa Americana*), montane vole (*Microtus montanus*), loggerhead shrike (*Lanius ludovicianus*), Swainson's hawk (*Buteo swainsoni*), sage thrasher (*Oreoscoptes montanus*), and burrowing owls (*Athene cunicularia*) in the Project area.

Mature Ponderosa Pine Species Association

There is no mature ponderosa pine habitat capable of supporting white-headed woodpeckers (*Picoides albolarvatus*), flammulated owls (*Otus flammeolus*), or pinyon jays (*Gymnorhinus cyanocephalus*) in the Project area.

Big Game

Black Bear, Elk, Mule Deer, and Wild Turkey

Thinning and Fuels Reduction

Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report.

Temporary Road and Landing Construction

Temporary roads have been aligned and landing sites identified to minimize impacts to large diameter trees and snags that may provide denning structure for black bears. The construction of temporary roads will not remove riparian habitat that provides foraging and cover for big game. Thus, impacts to big game are expected to be minimal.

Road-Related Activities

Road-related activities will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists report.

Cumulative Effects

Cumulatively, effects for the preferred alternative are similar to those as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Thus, cumulative effects for the preferred alternative would not significantly impact habitat for big game species.

Avian Communities

Thinning and Fuels Reduction

Thinning and underburning will have similar effects as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Mastication has the potential to impact the avian communities by removing shrub habitat and damage or destroy ground nests. However, mastication is proposed on less than eight percent of the Project area, much of which is limited in shrub understory. Because topography within stands is highly variable and masticators will be restricted to slopes ≤ 35 percent, the actual number of acres and percent of the Project Area treated by mastication will likely be less than that presented above. Thus, mastication is not expected to significantly alter the distribution of the shrub component across the landscape or destroy active nests.

Temporary Road and Landing Construction

Temporary road and landing construction will impact habitat for avian species by removing a variety of habitat components including live trees, snags, and shrubs. Combined, these actions are expected to impact approximately 29 acres or < 0.2 percent of habitat within the Project area. Thus, these actions are not expected to appreciably reduce the amount of habitat on the landscape.

Road-Related Activities

Road decommissioning may remove small, discrete patches of habitat. No other road-related activities are expected to impact habitat.

Cumulative Effects

Cumulatively, effects for the preferred alternative are similar to those as discussed for alternatives 2, 4, and 5 in the original Wildlife Specialists Report. Thus, cumulative effects for the preferred alternative would not significantly impact habitat for the avian communities within the Project area.

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